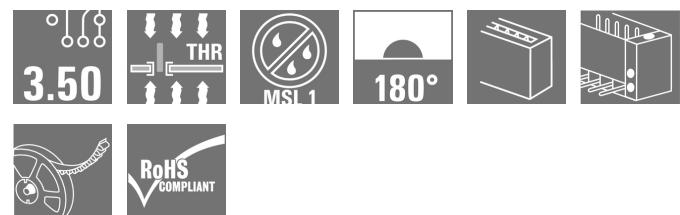


**SL-SMT 3.50/03/180F 1.5SN BK RL**

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergsstraße 26  
 D-32758 Detmold  
 Germany

[www.weidmueller.com](http://www.weidmueller.com)

**Product image**

Similar to illustration

**High-temperature-resistant male header, 3.50 mm pitch.**

- **Plugging direction parallel (90°), straight 180° or angled (135°) to PCB**
- **Housing variants: closed side (G), screw flange (F), solder flange (LF) or snap-on solder flange (RF)**
- **Optimised for the SMT process**
- **Pin length 3.2 mm universal for all soldering methods**
- **Pin length 1.5 mm optimised for reflow soldering methods**
- **Packed either in a box (BX) or tape-on-reel (RL)**
- **Male header can be coded**

**General ordering data**

Version	PCB plug-in connector, male header, Flange, THT/THR solder connection, 3.50 mm, Number of poles: 3, 180°, Solder pin length (l): 1.5 mm, tinned, black, Tape
Order No.	<a href="#">1760974001</a>
Type	SL-SMT 3.50/03/180F 1.5SN BK RL
GTIN (EAN)	4032248135806
Qty.	265 pc(s).
Product data	IEC: 320 V / 15 A UL: 300 V / 10 A
Packaging	Tape

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**Technical data****Dimensions and weights**

Depth	7.5 mm	Depth (inches)	0.295 inch
Height	12.6 mm	Height (inches)	0.496 inch
Height of lowest version	11.1 mm	Width	17.5 mm
Width (inches)	0.689 inch	Net weight	2.375 g

**System specifications**

Product family	OMNIMATE Signal - series BL/SL 3.50										
Type of connection	Board connection										
Mounting onto the PCB	THT/THR solder connection										
Pitch in mm (P)	3.5 mm										
Pitch in inches (P)	0.138 inch										
Outgoing elbow	180°										
Number of poles	3										
Number of solder pins per pole	1										
Solder pin length (l)	1.5 mm										
Solder pin length tolerance	0 / -0.3 mm										
Solder pin dimensions	d = 1.2 mm, Octagonal										
Solder pin dimensions = d tolerance	0 / -0.03 mm										
Solder eyelet hole diameter (D)	1.4 mm										
Solder eyelet hole diameter tolerance (D)+ 0,1 mm											
Outside diameter of solder pad	2.3 mm										
Template aperture diameter	2.1 mm										
L1 in mm	7 mm										
L1 in inches	0.276 inch										
Number of rows	1										
Pin series quantity	1										
Touch-safe protection acc. to DIN VDE 57 106	Safe from back-of-hand touch										
Touch-safe protection acc. to DIN VDE 0470	IP 10										
Volume resistance	≤5 mΩ										
Can be coded	Yes										
Tightening torque for screw flange, max.	0.1 Nm										
Plugging force/pole, max.	6 N										
Pulling force/pole, max.	6 N										
Tightening torque	<table border="1"> <tr> <td>Torque type</td> <td>Mounting screw, PCB</td> </tr> <tr> <td>Usage information</td> <td> <table border="1"> <tr> <td>Tightening torque</td> <td>min. 0.1 Nm</td> </tr> <tr> <td></td> <td>max. 0.15 Nm</td> </tr> <tr> <td>Recommended screw</td> <td>Part number <a href="#">PTSC KA 2.2X4.5 WN1412</a></td> </tr> </table> </td> </tr> </table>	Torque type	Mounting screw, PCB	Usage information	<table border="1"> <tr> <td>Tightening torque</td> <td>min. 0.1 Nm</td> </tr> <tr> <td></td> <td>max. 0.15 Nm</td> </tr> <tr> <td>Recommended screw</td> <td>Part number <a href="#">PTSC KA 2.2X4.5 WN1412</a></td> </tr> </table>	Tightening torque	min. 0.1 Nm		max. 0.15 Nm	Recommended screw	Part number <a href="#">PTSC KA 2.2X4.5 WN1412</a>
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Tightening torque	min. 0.1 Nm										
	max. 0.15 Nm										
Recommended screw	Part number <a href="#">PTSC KA 2.2X4.5 WN1412</a>										

**Material data**

Insulating material	LCP GF	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	IIIa
Comparative Tracking Index (CTI)	≥ 175	Moisture Level (MSL)	1
UL 94 flammability rating	V-0	Contact material	CuSn
Contact surface	tinned	Layer structure of solder connection	2...3 µm Ni / 5...7 µm Sn
Layer structure of plug contact	2...3 µm Ni / 5...7 µm Sn	Storage temperature, min.	-40 °C
Storage temperature, max.	70 °C	Operating temperature, min.	-50 °C
Operating temperature, max.	100 °C	Temperature range, installation, min.	-30 °C
Temperature range, installation, max.	100 °C		

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**Technical data****Rated data acc. to IEC**

tested acc. to standard	IEC 60664-1, IEC 61984	Rated current, min. number of poles (Tu=20°C)	15 A
Rated current, max. number of poles (Tu=20°C)	12 A	Rated current, min. number of poles (Tu=40°C)	13 A
Rated current, max. number of poles (Tu=40°C)	10 A	Rated voltage for surge voltage class / pollution degree II/2	320 V
Rated voltage for surge voltage class / pollution degree III/2	160 V	Rated voltage for surge voltage class / pollution degree III/3	160 V
Rated impulse voltage for surge voltage class/ pollution degree II/2	2.5 kV	Rated impulse voltage for surge voltage class/ pollution degree III/2	2.5 kV
Rated impulse voltage for surge voltage class/ contamination degree III/3	2.5 kV	Short-time withstand current resistance	3 x 1s with 100 A

**Rated data acc. to CSA**

Institute (CSA)



Certificate No. (CSA)

200039-1176845

Rated voltage (Use group B / CSA)	300 V	Rated voltage (Use group D / CSA)	300 V
Rated current (Use group B / CSA)	10 A	Rated current (Use group D / CSA)	10 A
Reference to approval values	Specifications are maximum values, details - see approval certificate.		

**Packing**

Packaging	Tape	VPE length	40 mm
VPE width	330 mm	VPE height	330 mm
Tape depth (T2)	16.5 mm	Tape width (W)	32 mm
Tape pocket depth (K0)	16 mm	Tape pocket height (A0)	7.8 mm
Tape pocket width (B0)	19.2 mm	Tape pocket separation (P1)	16 mm
Tape hole separation (E)	1.75 mm	Tape pocket separation (F)	14.2 mm
Tape reel diameter Ø (A)	330 mm	Surface resistance	$Rs = 10^9 - 10^{12} \Omega$
Width Pick & Place Pad (W <sub>PPP</sub> )	6.8 mm	Length Pick & Place Pad (L <sub>PPP</sub> )	12.65 mm
Diameter of the withdrawal surface (Ø D <sub>max</sub> )	5 mm	Protrusion 1 Pick & Place Pad (L <sub>O1 (PPP)</sub> )	2.5 mm
Protrusion 2 Pick & Place Pad (P <sub>O2 (PPP)</sub> )	2.7 mm		

**Classifications**

ETIM 6.0	EC002637	ETIM 7.0	EC002637
ETIM 8.0	EC002637	ECLASS 9.0	27-44-04-02
ECLASS 9.1	27-44-04-02	ECLASS 10.0	27-44-04-02
ECLASS 11.0	27-46-02-01	ECLASS 12.0	27-46-02-01

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**Technical data****Important note**

IPC conformity	Conformity: The products are developed, manufactured and delivered according international recognized standards and norms and comply with the assured properties in the data sheet resp. fulfill decorative properties in accordance with IPC-A-610 "Class 2". Further claims on the products can be evaluated on request.
Notes	<ul style="list-style-type: none"> <li>• Gold-plated contact surfaces on request</li> <li>• Rated current related to rated cross-section &amp; min. No. of poles.</li> <li>• Diameter of solder eyelet D = 1.4+0.1mm</li> <li>• Solder eyelet diameter D = 1.5 + 0.1 mm, from 9 poles</li> <li>• P on drawing = pitch</li> <li>• Rated data refer only to the component itself. Clearance and creepage distances to other components are to be designed in accordance with the relevant application standards.</li> <li>• For additional mechanical support for male connectors with screw flange (...F), we recommend an additional cable gland with fastening screws (sheet metal screw ISO 1481-ST 2.2x4.5 C or ISO 7049-ST 2.2x4.5 C – see Accessories). Cable gland only permitted before soldering.</li> <li>• Long term storage of the product with average temperature of 50 °C and average humidity 70%, 36 months</li> </ul>

**Approvals**

## Approvals



ROHS	Conform
UL File Number Search	<a href="#">UL Website</a>
Certificate No. (UR)	E60693

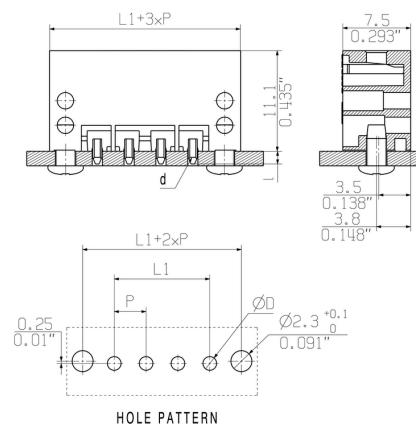
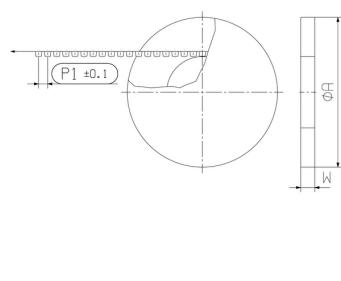
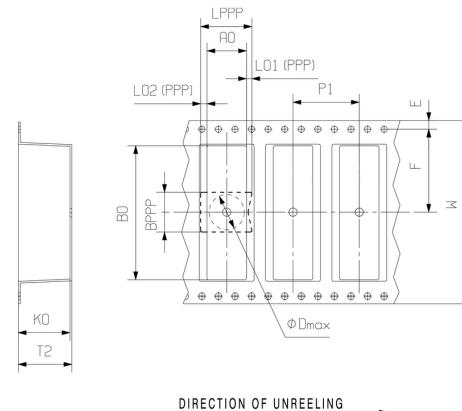
**Downloads**

Engineering Data	<a href="#">CAD data – STEP</a>
Product Change Notification	<a href="#">PCN_2015_208_PL30X_SC-SMT_SL_SMT_3.xx_5.xx_neue_Tapeverpackung_Step_3_DE</a> <a href="#">PCN_2015_208_PL30X_SC-SMT_SL_SMT_3.xx_5.xx_new_Tape_Packaging_Step_3_EN</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>
Brochures	<a href="#">FL DRIVES EN</a> <a href="#">FL DRIVES DE</a>
White paper surface mount technology	<a href="#">Download Whitepaper</a>

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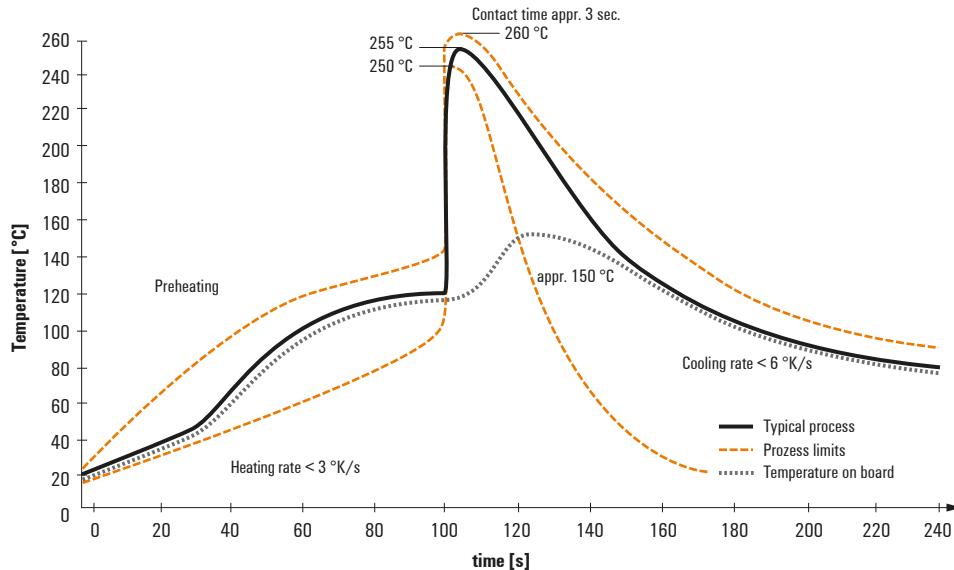
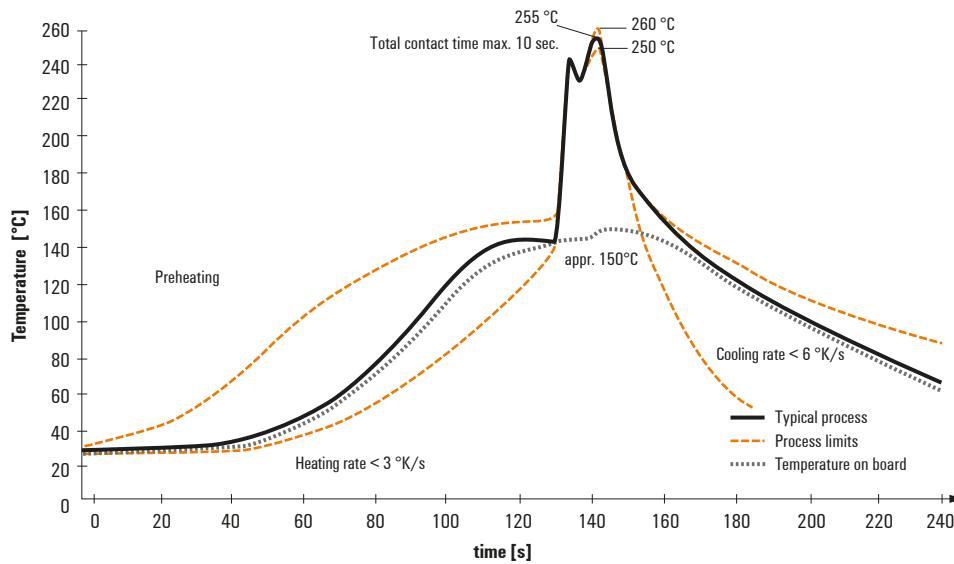
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**Drawings****Dimensional drawing****Dimensional drawing****Dimensional drawing****Example of use**

## Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**  
 Klingenbergsstraße 16  
 D-32758 Detmold  
 Germany  
 Fon: +49 5231 14-0  
 Fax: +49 5231 14-292083  
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**Single Wave:****Double Wave:****Wave soldering profiles**

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

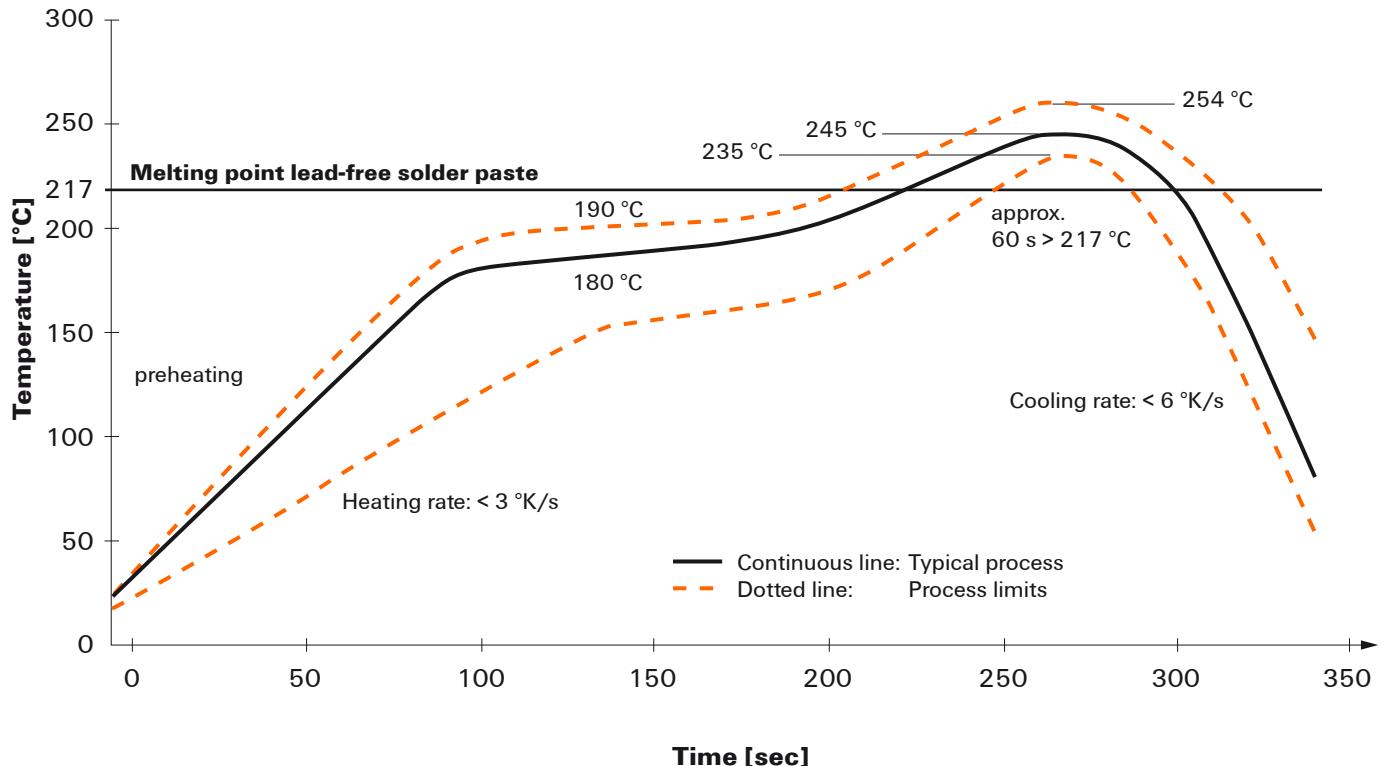
When choosing a suitable profile for your application, the following factors also need to be considered:

- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.

## Recommended reflow soldering profile

Weidmüller Interface GmbH & Co. KG  
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 Germany  
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 Fax: +49 5231 14-292083  
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## Reflow soldering profile

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:

- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically  $\leq +3\text{K/s}$ . In parallel the solder paste is 'activated'. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at  $\geq -6\text{K/s}$  solder is cured. Board and components cool down while avoiding cold cracks.